

Remarks

Claims 1-59 were pending in the present application. Claims 15-24 and 37-59 were withdrawn. Claims 1-14 and 25-36 are rejected.

Claims 4-5, 12, 15-24, 26-27, and 37-59 are hereby cancelled. Applicant reserves the right to pursue these claims in a continuing application.

New claims 60-71 are presented for examination.

Claim objections

The various informalities pointed out by the Examiner have been corrected.

Claim Rejections - 35 U.S.C. § 112

Claims 1-14 and 25-36 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has corrected the antecedent basis issues with claims 1, 25, and 34.

Claim Rejections - 35 U.S.C. § 102/103

Claims 1-14 and 25-36 are rejected under 35 U.S.C. § 102(a) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the journal article by Aslam et al.

Independent claims 1 and 25 are amended so that the metal consists of the following oxidation states: +1, +2, +3, +4, +5, +6, +7, and +8. Aslam et al. specifically includes

the 0 oxidation state (i.e., the metalliv state). Amended independent claims 1 and 25 use the “consisting of” transition in describing the oxidation states of the metal. This excludes the possibility of the metal including the 0 oxidation state.

New claim requires the “donor ligands selected from the group consisting of selected from the group consisting of 2,2'-bipyridine, pyrazole, imidazole, triazole, tetrazole, and combinations thereof.” Each of these donor ligands is a multidentate ligand. Aslam et al. fails to disclose the used of multidentate ligands. As exemplified by the use of 2,2'-bipyridine in the examples of the present application, such multidentate ligands provided some advantage to separation of the nanoparticle.

Accordingly, for at least these reasons, claims 1-14, 25-36, and 60-71 are allowable under 35 U.S.C. § 102(a) or under 35 U.S.C. § 103(a) over Aslam et al.

Claims 1-4 and 25-36 are rejected under 35 U.S.C. § 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Goldstein '145.

Independent claims 1 and 25 are amended so that the metal consists of the following oxidation states: +1, +2, +3, +4, +5, +6, +7, and +8. Goldstein specifically includes the 0 oxidation state as is evident from the following:

The reducing agent is selected to have an electrochemical potential sufficient to **reduce the metal ion from a positive oxidation state to a zero oxidation state** metal atom or produce metal hydrides that in turn reduce to zero oxidation state metals. The result of metal ion reduction in the presence of the organic ligand-metal ion complex is the formation of a metal nanocrystal having associated therewith the organic ligand.

Goldstein '145 (emphasis added)

Amended independent claims 1 and 25 use the “consisting of” transition in describing the oxidation states of the metal. This excludes the possibility of the metal including the 0 oxidation state.

New independent claim 60 requires that the nanoparticles include metal oxides. Goldstein does not disclose nanoparticles with oxide. Although the methods of preparation between the present invention and Goldstein have some similarities, the methodology is not exactly the same. Moreover, the failure of Goldstein to recover oxides may indicate a deficiency of the Goldstein methods since isolation is often an integral step of any synthetic preparation. Claim 60 also includes donor ligands “selected from the group consisting of selected from the group consisting of 2,2'-bipyridine, pyrazole, imidazole, triazole, tetrazole, and combinations thereof.” Each of these donor ligands is a multidentate ligand. With the donor ligand, the choices of the donor ligand represent a selection invention over Goldstein. As exemplified by the use of 2,2'-bipyridine in the examples of the present application, such multidentate ligands provided some advantage to separation of the nanoparticle.

Accordingly, for at least these reasons, claims 1-14, 25-36, and 60-71 are allowable under 35 U.S.C. § 102(a) or under 35 U.S.C. § 103(a) over Goldstein '145.

Conclusion

Applicants have made a genuine effort to respond to each of the Examiner's objections and rejections in advancing the prosecution of this case. Applicants believe that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If any additional issues need to be resolved, the Examiner is invited to contact the undersigned at his earliest convenience.

The Petition fee of \$65.00 is being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. The Commissioner is hereby authorized to charge any additional fees or credit any overpayments as a result of the filing of this paper to Deposit Account No. 02-3978.

Respectfully submitted,
CHARLES H. WINTER ET AL.

By /James W. Proscia/
James W. Proscia
Reg. No. 47,010
Attorney/Agent for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351